

**REGULATIONS GOVERNING
ONSITE DISPOSAL OF SANITARY SEWAGE
AND HUMAN EXCRETA
IN
MACOMB COUNTY, MICHIGAN**



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**REGULATIONS GOVERNING ONSITE
DISPOSAL OF SANITARY SEWAGE
AND HUMAN EXCRETA**

IN

MACOMB COUNTY, MICHIGAN

ARTICLE I – TITLE, PURPOSE, AUTHORITY AND JURISDICTION

Section 1.1 – Title

These Regulations shall be identified by the title Regulations Governing Onsite Disposal of Sanitary Sewage and Human Excreta in Macomb County, Michigan.

Section 1.2 – Purpose

These Regulations are hereby adopted for the purposes of protecting public health and the quality of the natural environment, and to prevent the occurrence of public health nuisances and public health hazards resulting from improper sanitary sewage disposal practices, and to govern the design, installation, location and operation of individual onsite sewage disposal systems.

Section 1.3 – Authority

These Regulations are hereby adopted pursuant to authority conferred upon local health departments by Section 2441 (1) of the Michigan Public Health Code, Act 368, P.A. 1978, as amended.

Section 1.4 – Jurisdiction

The responsibility for administration and enforcement of these Regulations shall reside with the Director of the Macomb County Health Department.

These Regulations, including all amendments hereafter adopted, shall be in full force and effect throughout all areas of Macomb County, incorporated and unincorporated.

If a provision of these Regulations is found to be in conflict with provisions of any other statutes, rules or requirements, then the more restrictive of such provisions shall apply consistent with the provisions of Article VIII.

ARTICLE II – DEFINITIONS

Section 2.1 – General Provisions

Words, terms and expressions utilized in these Regulations shall have the meanings defined in this Article. Words, terms and expressions which are not defined in this Article shall possess their commonly accepted meanings in accordance with standard English usage.

The term “shall” is always mandatory and not merely directory.

Section 2.2 – Definitions

Approved/Approval

For purposes of these Regulations, the term approved or approval denotes that a condition, facility, thing, premise, action or use, is in satisfactory conformance with the intent, purpose and applicable standards of these Regulations.

Aggregate

A particulate material utilized for structural support and sewage effluent dispersal within an onsite subsurface sewage disposal system, consisting of washed stone, gravel, or similar materials meeting the Michigan Department of Transportation standards for 6A aggregate.

Appeal

A formal written request for administrative review of any decision, action, or failure to act, on the part of the Director, pursuant to the provisions of these Regulations.

Building Sewer

The pipe or conduit which conveys untreated sanitary sewage from a premise to a septic tank or other sewage treatment device, or to a public sanitary sewer.

Department

The Macomb County Health Department.

Director

The Director of the Macomb County Health Department, or other employee of the Department, designated or authorized by the Director to perform services or functions pursuant to the provisions of these Regulations.

Dosing Chamber

An approved tank or receptacle used for the purpose of retaining overflow from a septic tank for controlled discharge to an onsite subsurface sewage disposal system by means of pumps or siphon devices.

Drainfield

A type of onsite subsurface sewage disposal system consisting of interconnected excavated trenches, each of which contains approved open joint or perforated pipe laid upon a bed of aggregate material of uniform thickness which receives septic tank effluent for final assimilation and absorption by the underground soil matrix.

Effluent

As used in these Regulations the term effluent means the partially treated sanitary sewage outflow discharge of a septic tank or similar detention device.

Fill Sand

Particulate material meeting the Michigan Department of Transportation standard for 2NS sand or its equivalent, as approved by the Director.

Groundwater

Water which exists beneath the ground surface.

Groundwater Elevation

The elevation of the upper surface of the zone of groundwater saturation, also known as the water table.

Habitable Building

A temporary or permanent building, facility or structure, or part thereof, where persons reside, live, sleep, cook, are employed or congregate.

High Groundwater Elevation

The elevation of the upper surface of the zone of groundwater saturation occurring during the spring wet season, also known as the high water table.

Infiltrative Surface

That portion of the interface between a subsurface sewage disposal system and surrounding soils which is intended to conduct sewage effluent away from the system into the surrounding soil matrix.

Onsite Sewage Disposal System

Any device or facility installed or constructed to store, treat or dispose of sanitary sewage or human excreta from premises where a public sanitary sewer is, or was, unavailable for use at the time of such construction or installation.

Onsite Subsurface Sewage Disposal System

An inground facility consisting of one or multiple septic tanks and drainfields and all associated fittings, effluent, distribution devices, piping, and connections.

Conventional Onsite Subsurface Sewage Disposal System

A system which includes a building sewer, one or more septic tanks, a drainfield, and all associated connections, fittings, and appurtenances which is installed in a location meeting the site suitability criteria prescribed in these Regulations.

Engineered Alternative Onsite Subsurface Sewage Disposal System

A facility plan prepared by a professional currently licensed under Act 299, P.A. 1980 or Act 368, P.A. 1978, Part 184, which employs design features, processes, construction or operational methods significantly different from those which apply to a conventional onsite subsurface sewage disposal system installed in a location meeting the site suitability criteria of these Regulations.

Owner

Any person, agency, firm or corporation having a legal or equitable interest in the property.

Percolation/Permeability Index

As used in these Regulations, the ability of a given soil matrix to receive, transport and absorb sewage effluent.

Permittee

The term permittee shall mean the person to whom a permit is issued by the Director pursuant to these Regulations.

Person

Any individual, natural person, trustee, court appointed representative, agency, group, association, organization, firm, corporation, club, institution, partnership, or other legally definable entity.

Premise

Any house, building, structure, facility or improvement from which sanitary sewage originates.

Public Health Nuisance

As used in these Regulations, a public health nuisance shall mean any condition where the generation, distribution, storage, treatment or disposal of sanitary sewage or human excreta, at or from a premise, creates an actual or potential threat to community health, sanitation, and safety.

Public Sanitary Sewer

A system of pipes and conduits used or intended to be used for the collection and transportation of sanitary sewage, which is owned, operated and maintained by a governmental entity.

Available Public Sanitary Sewer

A public sewerage system located not more than 200 feet at its nearest point to a premise from which sanitary sewage originates, the use of which is permitted by the responsible governmental entity.

Regulations

The Regulations Governing Onsite Disposal of Sanitary Sewage and Human Excreta in Macomb County, Michigan.

Sanitary Sewage

Any water transported waste material produced by any toilet, sink, bathtub, urinal, garbage disposal, shower, or laundry device; and human body waste material in any form, originating within or upon any premise. Excluded from the definition are storm drainage, and waste waters from roofs, foundation drains, water softening devices, industrial and commercial processes, and commercial laundries.

Septic Tank

A buried watertight, covered tank designed and constructed to receive and partially treat sanitary sewage by physical settling and anaerobic decomposition prior to its release to a drainfield.

Serial Distribution

An arrangement of standard soil infiltration trenches which are installed to permit effluent to pond in one trench and fully utilize its total infiltration area before flowing to succeeding trenches.

Site Suitability Evaluation

Investigations undertaken to assess and evaluate onsite conditions such as soil permeability, groundwater elevation, topography, surface water flooding, available area, isolation requirements and other site specific factors directly affecting the design, location, construction and satisfactory continuous operation of an onsite sewage disposal system complying with the requirements of Article VI of these Regulations.

Standard Soil Infiltration Trenches

Trenches ranging in width from 12 to 36 inches containing effluent distribution piping surrounded by an approved aggregate which is underlain by soil formations of acceptable permeability.

Toilet Device

A privy, outhouse, septic toilet, composting toilet, chemical toilet, or similar device, either fixed or portable, temporary or permanent, used for the collection, storage or disposal of human excreta.

Transmissivity

The characteristics of a soil formation that directly affect the rate of movement of water through the soil matrix.

Variances

Variations from the construction and installation provisions and requirements of these Regulations as authorized by the Director in specific situations when strict application of such provisions would be impossible, unreasonable or impose excessive hardship; and where such authorized variances can be accomplished without compromising the intent, purpose and standards of these Regulations.

ARTICLE III – GENERAL PROVISIONS

Section 3.1 – Prohibited Sanitary Sewage Disposal Practices

It shall be unlawful for any person to discharge or deposit human excreta or sanitary sewage upon the ground surface; into a lake, river, stream or ditch; or in any location other than a public sanitary sewer, or functioning onsite sewage disposal system meeting the requirements of Section 3.4 of these Regulations.

Section 3.2 – Sanitary Sewage Of Unknown Origin From A Public or Private Drain Or Conduit

Whenever the Director shall determine that improperly treated sanitary sewage of unknown origin is flowing from the outlet of any public or private drain or conduit, he may issue public notices requiring persons owning premises from which such sewage originates, to cease and desist from the further discharge of improperly treated sanitary sewage into said drain or conduit. Notice shall further require property owners to connect such sewage flow to a public sanitary sewer if available, or in the absence thereof to comply with provisions of these Regulations. Public notice shall consist of the posting of at least five conspicuous notices in the probable area served by said drain or conduit. After no less than 30 days following posting of the notices, the Director may plug or cause to be plugged the outlet of said drain or conduit until such time as the sources of the sewage have been located. Owners of property known to be discharging improperly treated sanitary sewage into a drain or conduit so posted by the Director, shall be given written notice of corrections required within the time allowed by the posted notices. Failure to comply with said notice shall be a violation of these Regulations. The Director shall not be liable for any damages which result or might result from action authorized by this Section.

The provision of Act 245, P.A. 1929 as amended, shall take legal precedence over this Section when there is reason to believe that multiple premises are discharging sanitary sewage into a common drain or conduit.

Section 3.3 – Sewage Disposal Facilities Required

It shall be unlawful for any person to construct or maintain any premise which is not equipped with adequate facilities for the disposal of sanitary sewage or human excreta in a safe and sanitary manner.

Every premise not served by a public sanitary sewer must be served by an onsite sewage disposal system acceptable to the Director.

Every onsite sewage disposal system installed subsequent to the effective date of these Regulations shall conform to the design, location, materials and construction criteria contained herein.

Onsite sewage disposal systems in use prior to the effective date of these Regulations may continue in use only if such usage does not create a hazard to public health or a public health nuisance.

Every onsite sewage disposal system shall be of adequate design and capacity to properly accommodate the quantity and type of sanitary sewage produced by the premise it serves.

Section 3.4 – Onsite Sewage Disposal System Operation and Maintenance

Every onsite sewage disposal system shall be operated and maintained to prevent hazards to public health or public health nuisances.

Section 3.5 – Removal and Disposal of Materials from Onsite Systems

All waste materials removed from onsite sewage disposal systems, including sanitary sewage, human excreta, sludge, grease or septage, shall be handled and disposed of in a manner which does not violate applicable state or municipal laws, regulations or ordinances, or create a public health hazard or public health nuisance.

Persons who engage in the business of removal and disposal of such materials shall be licensed and comply with applicable statutory requirements of the State of Michigan.

Section 3.6 – Requirement for Connection to Public Sanitary Sewer

New Development

Newly constructed premises shall be required to utilize a public sanitary sewer for sanitary sewage disposal when such public sanitary sewer is available and of adequate capacity and when connection is authorized by municipal authorities having jurisdiction over the public sanitary sewer.

Existing Development

Existing premises may be required to connect to a public sanitary sewer by order of a city, village or township, when such sewer becomes available. Existing premises may also be required to connect to an available public sanitary sewer by the Director when continued use of an onsite sewage disposal system would constitute a hazard to public health or would result in the creation of a public health nuisance.

Section 3.7 – Abandonment of Onsite Sewage Disposal Systems

Septic tanks, dosing chambers, seepage pits or similar below grade facilities shall be emptied and completely filled with earthen or other inert material when the use of such facilities is to be permanently discontinued pursuant to city, village or township ordinances or when so ordered by the Director.

ARTICLE IV – POWERS AND DUTIES OF THE DIRECTOR

Section 4.1 – General Provisions

When not in conflict with, or preempted by federal or state statutes, regulations or standards, the Director shall be responsible for regulating the design, location, installation, operation, and maintenance of all onsite sewage disposal systems within Macomb County. The Director shall also be empowered to exercise control over onsite sewage disposal systems regulated by others when so authorized by the public agencies possessing statutory jurisdiction over such onsite sewage disposal systems.

Section 4.2 – Power to Establish Policy, Criteria and Standards

The Director is empowered to establish criteria, policies and standards concerning the application and interpretation of these Regulations, and for the purpose of carrying out the responsibilities delegated to the Director by law.

Section 4.3 – Power to Conduct Inspections and Right of Entry

The Director shall be empowered to conduct inspections of all properties, public or private, in conjunction with the fulfillment of the duties and responsibilities specified in these Regulations.

No person shall refuse to permit the Director to inspect any premise at reasonable times as provided in Sections 1291 and 2446, Public Act 368 of 1978, as amended.

Section 4.4 – Power to Issue or Deny Permits for Onsite Sewage Disposal Systems

The Director is empowered to issue permits authorizing the installation of all onsite sewage disposal systems subject to his jurisdiction.

If the Director determines that the installation of an onsite sewage disposal system may endanger public health or create a public health nuisance, or will not comply with the provisions of these Regulations, he is authorized to deny issuance of a permit for such facility.

Section 4.5 – Power to Issue Violation Notices; Power to Order Corrective Actions

The Director is empowered to issue a notice to any person who violates a provision of these Regulations. Such notice shall contain a description of the violation, and shall cite the specific section of the Regulation which applies.

The Director may also order correction of a violation, and may specify the nature of corrective action required and a reasonable time limit for such corrective action to be completed. In the case of violations which may present an imminent danger to public health, immediate corrective action may be required.

Section 4.6 – Power to Pursue Judicial Remedies and Sanctions

The Director shall be empowered to seek judicial remedies and sanctions for any violation of these Regulations when administrative efforts to resolve the violation have proven ineffective, inadequate, or are deemed inappropriate.

Section 4.7 – Power to Condemn Premises as Unfit for Human Occupancy

The Director shall be empowered to condemn and so post any premise as unfit for human occupancy if such premise is not provided with an acceptable onsite sewage disposal system. No person shall occupy, or permit to be occupied, any premise so condemned until the Director has terminated the condemnation order.

Section 4.8 – Duty to Review Onsite Sewage Disposal System Plans

The Director shall review, evaluate, approve or reject, plans and proposals for all onsite sewage disposal systems, including those types of sewage disposal facilities for which plan review authority is authorized by other public agencies under federal or state statutes, regulations or standards.

Section 4.9 – Duty to Investigate Complaints

The Director shall investigate complaints from persons alleging public health hazards or public health nuisances resulting from improper sanitary sewage disposal practices or from malfunctioning onsite sewage disposal systems.

Section 4.10 – Interagency Cooperation

The Director is authorized to enter into cooperative agreements with federal, state and local agencies to develop a coordinated program for effective management of onsite sanitary sewage disposal systems in Macomb County.

ARTICLE V – ONSITE SEWAGE DISPOSAL SYSTEM PERMITS

Section 5.1 – Permit Requirements

a. General Requirements

No person shall construct, repair, enlarge, alter or relocate any onsite sewage disposal system serving any premise within Macomb County without first obtaining a permit authorizing such action from the Director.

b. Permit Exceptions

The requirement to obtain an onsite sewage disposal system permit from the Director shall not apply when any of the following circumstances prevail:

- All sanitary sewage from the premise will be discharged directly into a public sanitary sewer.
- The served premise falls within a category which subjects it to the preemptive legal jurisdiction of an agency of the state or federal government, and such agency has not delegated authority for issuance of permits to the Department.
- Proposed modification(s) to an existing onsite sewage disposal system are of such a minor nature as to render a permit unnecessary, in the judgement of the Director.

c. Building Construction Permit

No officer or employee of any city, village, or township within Macomb County shall issue a construction permit for any new building or structure which must be served by an onsite sewage disposal system pursuant to these Regulations, unless a permit for such sewage disposal facility has first been obtained by the owner. In the case of an existing building or structure, a city, village, or township official shall notify the Department prior to issuance of a construction permit to ensure that any proposed construction will not adversely affect an existing onsite sewage disposal system.

Section 5.2 – Application for Permits

a. Eligibility

Applications for onsite sewage disposal system permits shall be submitted by owners of properties upon which onsite sewage disposal systems are to be constructed, repaired, enlarged, altered or relocated, or by other persons acting as authorized agents of the property owner.

b. Permit Application Procedures

Applications for onsite sewage disposal system permits shall be submitted on forms provided by the Director. Applications shall indicate the complete name and address of the property owner, and of the permit applicant; an accurate description of the property upon which the onsite sewage disposal system is, or will be, located; accurate information on the type and use of the premise(s) to be served by the proposed onsite sewage disposal system; and when required by the Director:

- A reasonably accurate representation drawn to scale or dimensioned of the development details of the property upon which the onsite sewage disposal system is, or will be located; including such features as property boundaries, elevations, surface slopes, underground utilities, easements, buildings, wells, surface water bodies, driveways, swimming pools, abutting roads, and other physical features.
- A reasonably accurate estimate of the daily sanitary sewage flow (average and peak values) to be accommodated by the onsite sewage disposal system.
- Complete and reliable information concerning the soil and groundwater elevation characteristics of the onsite sewage disposal system site.
- Complete details regarding the proposed location, design, elevations, construction detail and materials of the onsite sewage disposal system to be constructed, repaired, enlarged, or relocated.

Additional specific information may be required by the Director, when such information is necessary to adequately evaluate a permit application.

The Director may require that a site development plan, and/or the design of the onsite sewage disposal system serving the site, be prepared by a professional currently licensed or registered under Act 299, P.A. 1980 or Part 184, Act 368, P.A. 1978.

c. Permit Applicant's Responsibilities

- It shall be the responsibility of the permit applicant to furnish the Director with all facts, details, designs, and information required in these Regulations. Any expenses associated with the provision of such facts, details, designs, and information shall be the responsibility of the applicant. The Director may provide technical advice and assistance to applicants upon request relative to design, location, and construction; however, responsibility for the adequacy of all plans, designs, and construction of the onsite sewage disposal system shall reside with the applicant or premise owner.
- Applications shall be accompanied by the required fees in accordance with Article XI of the Regulations.
- It shall be a violation of these Regulations to misrepresent, omit, or withhold information or pertinent data relative to the use of the premises or the facilities therein, or to alter permits, approved plans or other documents upon which the minimum requirements contained in these Regulations are based. Moreover, following issuance of the original permit, any anticipated changes, alterations or additions to the premise or its use must be reviewed with the Director to determine conformance with minimum requirements of these Regulations.

Section 5.3 – Permit Issuance

a. General provisions

The Director, following review of an application for an onsite sewage disposal system permit, may issue a permit to the applicant authorizing construction, repair, replacement, enlargement, alteration, or relocation. The permit shall describe the scope, nature and extent of work authorized, and may contain specific design, construction, or location requirements or limitations which the Director deems necessary.

b. Permit Issuance Criteria

Permits shall not be issued until the Director determines that the site proposed for construction, repair, replacement, enlargement, alteration, or relocation of an onsite sewage disposal system has upon examination exhibited physical characteristics, features, and properties compatible with satisfactory continuous operation of an onsite sewage disposal system, and; other requirements and provisions of this and other Articles of these Regulations have been met.

Section 5.4 – Permit Denials

a. Criteria for Permit Denial

The Director may deny issuance of an onsite sewage disposal system permit for any of the following reasons or causes:

- Failure to meet the provisions of this Article.
- Incomplete, inaccurate, or false information supplied by the applicant.
- Failure of the proposed installation site for the onsite sewage disposal system to conform to the requirements of Article VI of these Regulations.
- Failure of the proposed onsite sewage disposal system design to conform to the requirements of these Regulations.
- Failure of the applicant to submit the required application fee.
- The existence of any facts or conditions which give the Director reasonable grounds to believe that issuance of the requested permit would cause pollution, create a public health nuisance, or result in a hazard to public health.
- Where public sanitary sewer is available to serve the premise.

b. Notification of Denial

When an application for an onsite sewage disposal system permit has been denied, the Director shall notify the applicant of such action including reasons for the denial, and provide an opportunity to discuss further actions which the applicant may undertake, if any, to secure the requested permit.

Section 5.5 – Permit Expiration

Permits issued by the Director shall be valid for a period of two (2) years from date of issuance after which they shall be void.

Unexpired permits reinstated prior to the effective date of these Regulations at the request of the permittee will continue in effect for a period of two years following the date of reissuance by the Director.

Section 5.6 – Transfer of Permits

Valid permits are transferable from one permit holder to another when no change to the design, location or use of the onsite sewage disposal system has been made, or is proposed.

Section 5.7 – Voidance of Permits

The Director may declare a previously issued permit to be null and void, for any of the following reasons or causes:

- False or inaccurate information supplied by the permit applicant, permittee, or their representative.
- Alterations made to the designated installation site.
- Any permit expired pursuant to Section 5.5 of these Regulations.
- Any permit which has been superseded by a permit with a more current issuance date.
- Changes to the intended onsite sewage disposal system use.
- Isolation distances required by these Regulations cannot be satisfied.
- Insufficient area allocated or reserved for onsite sewage disposal system installation.
- Current facts, circumstances or conditions which affect the previously issued permit in a manner that now prevents compliance with these Regulations or may endanger public health, or cause pollution.

ARTICLE VI – ONSITE SEWAGE DISPOSAL SYSTEMS – LOCATION, DESIGN, MATERIALS AND CONSTRUCTION CRITERIA

Section 6.1 – Use/Ownership

No onsite sewage disposal system constructed after the effective date of these Regulations shall have multiple individual owners, or serve more than one single family residential dwelling unit or more than one commercial, industrial or institutional establishment or place of assembly unless specifically authorized by the Director.

Section 6.2 – Location

- a. A site proposed for the construction, repair, enlargement, relocation, alteration, or replacement of an onsite sewage disposal system shall comply with the provisions of these Regulations.

b. Onsite sewage disposal systems shall be located wholly upon and within the boundaries of the property served. The Director may permit exceptions to this provision when acceptable easement or right-of-way and use agreements are executed and recorded for the affected properties.

c. Structures, driveways, service roads, parking areas or pavement shall not be constructed over any component of an onsite sewage disposal system unless approved by the Director.

d. Onsite sewage disposal systems, or any component thereof, shall not be located or installed in a dedicated or recorded easement, road-right-of-way, or legally imposed setback area or other legal encumbrances without the consent and approval of the Director.

e. The Director shall not be responsible for identifying or locating property lines, easements, road-right-of-ways, legally imposed construction setbacks or flood plains or other legal encumbrances on sites proposed for the construction, repair, enlargement, relocation, alteration, or replacement of an onsite sewage disposal system. The permit applicant or premise owner shall furnish such information in accordance with the provisions of Section 5.2c of these Regulations.

Section 6.3 – Site Suitability Criteria

The following physical characteristics shall be considered by the Director when evaluating the suitability of a proposed onsite sewage disposal system site:

- a. Available, unencumbered installation area.
- b. Horizontal isolation/legal setback requirements.
- c. Slopes.
- d. Flooding potential.
- e. Groundwater elevation.
- f. Soil permeability and soil drainage.

Section 6.4 – Area Requirements

A suitable site shall possess sufficient usable land surface area to allow for the installation of an onsite sewage disposal system of adequate capacity to accommodate the premise(s) to be served.

Section 6.5 – Isolation Distance Requirements

A suitable site shall provide for required legal setbacks and horizontal isolation of the onsite sewage disposal system, and all components thereof, from other structures, objects, boundaries, or natural features in accordance with the minimum distances specified in the following table:

Minimum Isolation Requirements
For
Onsite Sewage Disposal Systems

FROM/	TO	Septic Or Dosing Tank	Effluent Line	Drainfield	Other System Components
Foundation Wall		10 Feet	10 Feet	10 Feet(3)	(4)
Property Boundary		10 Feet	10 Feet	10 Feet	(4)
Groundwater Drainage Pipe, Open Drainage Ditch or Footing Drain		10 Feet	10 Feet	10 Feet(3)	(4)
Lake, Stream or River		25 Feet(3)	25 Feet(1,3)	50 Feet(3)	(4)
Drop-Off (Slope \geq 25%)		10 Feet	10 Feet	10 Feet	(4)
Private Water Wells & Suction Lines		50 Feet(2)	50 Feet(1,2)	50 Feet(2)	(4)
Water Pressure Lines		10 Feet	10 Feet	10 Feet	(4)
Swimming Pools (Wall & Piping)		10 Feet	10 Feet	10 Feet	(4)

1. Ten feet of pipe materials and construction comply with standards of Michigan Department of Public Health for buried sewers constructed of approved watertight materials.
2. Greater isolation required for public water supply wells (see Act 399, P.A. 1976).
3. Greater isolation required where State of Michigan Criteria prevails.
4. Minimum isolation as determined by Director.

Section 6.6 – Slope Criteria

- a. A suitable site for an onsite sewage disposal system shall not possess slope conditions which prevent construction or interfere with the satisfactory operation of all components of the system.
- b. Slopes in excess of 1 foot vertical to each 8 feet horizontal (12.5%) are considered unacceptable, unless site modifications or design and installation proposals are made which will overcome site limitations imposed by excessive gradients.
- c. Additional drainfield requirements are prescribed in Section 6.15 of these Regulations.

Section 6.7 – Flooding Restrictions

Sites proposed for installation of an onsite sewage disposal system shall not be subject to surface flooding. Under no circumstances shall the final surface grade in the area of an onsite sewage disposal system be below the elevation of the 100 year flood plain. An installed drainfield shall also comply with the requirements prescribed in Section 6.15 of these Regulations.

Section 6.8 – Groundwater Elevation Requirements

a. General Provisions

The highest seasonal groundwater elevation beneath a site proposed for installation of an onsite sewage disposal system shall not exceed the elevation of the natural ground surface. An installed drainfield shall satisfy the groundwater isolation requirements contained in Section 6.15 of these Regulations.

b. Groundwater Elevation Determinations

The highest seasonal groundwater elevation is established by any or all of the following methods:

- Physical measurements.
- Physical examination of soils (by a person trained in soil science) for characteristics indicative of intermittent saturation.
- Other verifiable evidence and information acceptable to the Director.

c. Site Modifications

Onsite modifications including, but not restricted to, land balancing, filling, regrading or subsoil drainage may be permitted to overcome limitations imposed by high groundwater conditions. Such modifications must be reviewed and approved by the Director and comply with the provisions of this Article.

Section 6.9 – Soil Permeability Requirements

a. General Provisions

The entire site proposed for installation of a drainfield shall have not less than a two foot continuous vertical stratum of naturally occurring soil formations possessing permeability and textural properties capable of absorbing septic tank effluent under all anticipated use and weather conditions.

b. Acceptable Soil Permeability

- Soil formations to be utilized for absorption of septic tank effluent must have sufficient permeability and transmissivity to allow the vertical and horizontal infiltration of effluent into the subsoil matrix.
- A permeability rate equal to or less than 60 minutes per inch shall be the minimum acceptable permeability for site approval.
- Soil formations of acceptable permeability shall extend to a depth of at least three feet vertically below the bottom of the drainfield effluent distribution piping.
- Onsite modifications including, but not restricted to, land balancing, excavating, filling or regrading may be permitted to overcome limitations imposed by natural soil formations. Such modifications must be reviewed and approved by the Director and comply with the provisions of this Article.

Section 6.10 – Determination of Soil Permeability

Determination of soil permeability may be made by one, or a combination of, the following methods:

- a. A representative number of physical profile observations of soil texture, structure, coloration, and drainage characteristics by persons trained in soil science, to a depth of at least 5.5 feet below the existing ground surface in the site proposed for installation of a drainfield.

- b. Engineering properties of onsite soil formations as delineated in the Soil Interpretation Manual of Macomb County's "Detailed Soil Survey."
- c. Sieve analysis, to determine soil texture.
- d. Stabilized percolation tests conducted in accordance with procedures established by the Michigan Department of Public Health can be used to supplement a and b above.

Determinations of soil permeability shall be made by the Director or by an Architect, Engineer, Sanitarian or Land Surveyor licensed to practice in Michigan.

Section 6.11 – Building Sewers

The design, construction and installation of building sewers serving onsite sewage disposal systems falls under the regulatory jurisdiction of the local plumbing inspection authority.

Section 6.12 – Toilet Devices

Toilet devices shall be constructed and maintained in accordance with applicable municipal ordinances or the statutory requirements of the State of Michigan.

Section 6.13 – Septic Tanks

a. General Requirements

All sanitary sewage generated by any premise not connected to a public sanitary sewer shall be discharged into an approved septic tank prior to being discharged to any drainfield or other secondary treatment device. Wastewater from roofs, parking areas, footing drains, swimming pools, heating/cooling systems, water conditioning devices or other storm drainage shall not be discharged into any septic tank.

b. Existing Septic Tanks

When repairs are made to an existing onsite sewage disposal system, existing septic tanks which are part of such a system and which do not meet the standards contained in these Regulations, may remain in service with necessary modifications, if the Director determines that such existing tanks are capable of performing their intended function in an acceptable manner, and that no danger to human health or public health nuisance will result from their continued use.

c. Location

- No septic tank shall be installed in any location which does not comply with Section 6.2 of these Regulations or renders it inaccessible for purposes of inspection, cleaning and maintenance. A septic tank shall be isolated from other structures, objects, boundaries, or natural features in accordance with the isolation requirements specified in Section 6.5 of these Regulations.
- A septic tank shall be installed on undisturbed or settled soil capable of bearing its full weight.
- No septic tank shall be installed under any building, driveway, road, or parking area; provided that a septic tank may be installed in a location which subjects it to vehicular traffic or other mechanical or structural stresses, if it is reinforced in a manner which overcomes these stresses and is approved by the Director.
- Septic tanks shall be installed on the same side of the served premise as that through which the building sewer exits, unless otherwise approved by the Director.

d. Septic Tank Depth

The top of a septic tank shall not be buried deeper than 2.5 feet (30 inches) beneath the finished ground surface, unless adequately sized risers are provided above the access openings. Riser tops, when installed, shall not be buried deeper than 2.5 feet (30 inches) from the finished ground surface. Risers shall be equipped with tight fitting hatches or covers of reinforced concrete, or other material of equivalent properties acceptable to the Director.

e. Materials

A septic tank shall be fabricated of sound, durable watertight materials not subject to corrosion or decay, and structurally capable of supporting the stresses to which it will be subjected. Construction shall not permit the inflow or outflow of liquids except at hydraulically designed inlets and outlets. Acceptable materials may include reinforced concrete, concrete blocks, or other materials approved by the Director.

f. Compartmental Requirements

Septic tanks shall be compartmentalized or installed in series with the first compartment or tank equal to one-half to two-thirds of the total required liquid capacity.

g. Design and Dimension Requirements

Approved septic tanks shall conform to the following construction criteria:

- Rectangular in shape with the length approximately two times the width.
- A minimum liquid depth of 48 inches and a maximum liquid depth of 80 inches.
- Airspace above the liquid level equal to 20 percent of liquid depth.
- Inlet and outlet flow openings at least four inches inside diameter.
- Minimum compartment or tank horizontal dimension of two feet.
- Bottom of inlet opening at least two inches above the maximum liquid level of the tank.
- Inlet opening located at end of tank opposite the outlet opening.
- A tee, ell, baffle or other outlet device approved by the Director shall be installed at each outlet of a septic tank compartment. Such a tee, ell, baffle or other outlet device shall extend to a depth equal to at least 40% of the distance from the maximum liquid level to the bottom of the tank. A tee, ell, baffle or other outlet device shall be vented at its point of highest elevation within the tank. All outlet devices shall have a continuous interior minimum dimension of no less than four inches. All outlet devices shall be securely mounted to the tank outlet in such a manner as to prevent leakage or dislodgement.
- Annular openings at all pipe connections to a septic tank shall be sealed and made watertight at the points of entrance.
- Each tank or tank compartment shall have secured access openings in the top surface large enough to permit inspection, cleaning or maintenance. Access openings shall be provided with removable fitted lids or covers and permit accessibility to all inlet and outlet devices. When access openings are at finish grade, provisions must be made to prevent the entrance of surface water and the release of gases and odors.

- Each tank shall have the manufacturer's identity and the liquid capacity legibly cast into the tank top at the outlet end.
- Tanks or tank compartments and their inlet and outlet devices must be designed and constructed to allow gas to vent back through the building plumbing vent stack.

Section 6.14 – Septic Tank Capacities

a. General

Septic tanks serving residential, commercial, institutional and industrial premises shall provide a sanitary sewage detention period of not less than 24 hours at design flow.

b. Single Family Dwelling Premises

The liquid capacity of a septic tank serving a single family dwelling shall be based on the number of bedroom(s) present or contemplated:

Bedroom Count	Minimum Liquid Capacity
2	1000 Gallons
3	1250 Gallons
4	1500 Gallons
5	2000 Gallons
6 or More	Add 300 Gallons of Liquid Capacity Per Bedroom

c. Multiple Family Dwelling Premises

The liquid capacity of a septic tank serving multiple family dwellings shall be equal to 2.5 times the actual or calculated daily sewage flow.

d. Commercial, Institutional, Industrial, and Places of Assembly

Minimum liquid septic tank capacities shall be equal to 1.25 times the actual or calculated daily sewage flow, or when applicable, the provisions of the "State of Michigan Criteria For Subsurface Sewage Disposal."

e. Pressurized Building Sewer

Additional capacity and surface area shall be provided in accordance with criteria established by the Director when sanitary sewage is discharged to the septic tank under pressure or at high velocity, to minimize solids turbulence and short circuiting of flow.

Section 6.15 – Drainfields

a. General Requirements

- Sanitary sewage from any septic tank, or similar detention device which releases partially treated sewage effluent, shall be discharged into a drainfield designed to distribute and confine such effluent beneath the surface of the ground.
- The provisions of Section 6.1 of these Regulations shall apply to drainfields.
- No drainfield (and drainfield replacement reserve area when so required) shall be located in an area or at a site determined to be unsuitable by the Director.

b. Location Requirements

In addition to the provisions of Section 6.2 of these Regulations, the following requirements are hereby established:

- A drainfield (and drainfield replacement reserve area when so required) shall be protected against damage from vehicular traffic.
- A drainfield (and drainfield replacement reserve area when so required) shall be located in the onsite area designated on plans approved by the Director or on a construction permit issued pursuant to Section 5.3 of these Regulations.
- A drainfield (and drainfield replacement reserve area when so required) shall not be installed or located in a dedicated easement, road right-of-way, or legally imposed setback area without the consent and approval of the Director.

c. Available Usable Area Requirements

In addition to the provisions of Section 6.4 of these Regulations, sufficient unencumbered area must be allocated for installation of the drainfield (and drainfield replacement reserve area when so required) prescribed on plans approved by the Director or on the construction permit issued pursuant to Section 5.3 of these Regulations.

d. Isolation Requirements

A drainfield (and drainfield replacement reserve area when so required) shall comply with the provisions of Section 6.5 of these Regulations.

e. Slope Requirements

In addition to the provisions of Section 6.6 of these Regulations, the following requirements are hereby established:

- The Director shall critically examine subsoil texture and permeability underlying drainfields proposed on sloping ground to identify soil formations that may result in sidehill or downgradient effluent surface seepage. A drainfield (and drainfield replacement reserve area when so required) shall not be located on slopes when underlying soil formations will result in downslope effluent seepage.
- A drainfield (and drainfield replacement reserve area when so required) shall not be located on slopes which will result in surface erosion of drainfield earthen cover, or downgradient surface seepage of effluent.
- A drainfield (and drainfield replacement reserve area when so required) shall not be located at the base of slopes, embankments, or escarpments unless site modification or design and installation proposals are made to effectively intercept and divert surface and groundwater drainage and control soil erosion.
- Under no circumstances shall a drainfield (and drainfield replacement reserve area when so required) be located within 10 feet of the top edge of steep slopes, embankments or escarpments.

f. Flooding Restrictions

In addition to the provisions of Section 6.7 of these Regulations, a drainfield (and drainfield replacement reserve area when so required) shall not be located in a surface drainage pathway or in an area subject to flooding or surface water runoff.

g. Groundwater Isolation

In addition to the provisions of Section 6.8 of these Regulations, the lowest drainfield distribution pipe invert elevation shall never be less than 2.0 feet above the elevation of the highest seasonal groundwater elevation. Greater vertical isolation between the drainfield and the groundwater elevation may be required where State of Michigan criteria apply.

h. Permeability Requirements

- The provisions of Section 6.9 of these Regulations shall apply to drainfields (and drainfield replacement reserve area when so required).
- No drainfield (and drainfield replacement reserve area when so required) shall be located in soil profiles determined to have unacceptable permeability.

Section 6.16 – Drainfield Material Requirements

a. Effluent Piping

- Piping from a septic tank to a dosing chamber, distribution box or distribution header shall be of non-corrosive, durable, watertight, rigid, smooth-wall interior construction consisting of material approved by the Director.
- Effluent piping under driveways, parking areas or other areas subject to stresses shall be PVC Schedule 40 or equivalent, and shall be insulated against freezing when prescribed by the Director.

b. Effluent Distribution Piping

Distribution piping in drainfields shall conform to the “Michigan Department of Public Health Standards for Certification and Utilization of Perforated Plastic Tubing for Drainfields.” Agricultural drain tile and other pipe materials may be utilized if the construction and installation methods are approved by the Director.

c. Distribution/Drop Boxes

Effluent distribution boxes shall be of non-corrosive, durable, watertight construction, provided with tight-fitted, removable lids or covers, and comply with criteria established by the Director.

d. Pipe Fittings – Pipe Joints

Pipe fittings, connections, bonding agents, sealants, adhesives and pipe joining materials shall be of a type, design, and composition compatible with the piping used, and shall effectively serve the purpose intended.

e. Aggregate Surrounding Distribution Piping

Aggregate surrounding drainfield distribution piping shall conform to the Michigan Department of Transportation specification for 6A stone. Pea stone or other aggregate may be utilized below the required depth of 6A stone when authorized by the Director.

f. Aggregate Protective Barrier

The top surface of drainfield aggregate shall be provided with a soil entrapping barrier to minimize the infiltration of soil into the completed drainfield. Acceptable cover materials include untreated building paper, straw, hay, geotextiles or fiberglass matting.

g. Fill Material

Earthen fill material utilized for regrading under drainfields or for backfill of excavated areas below drainfields shall be granular material meeting the Michigan Department of Transportation specifications for 2NS sand or its equivalent as approved by the Director.

Figure 1

Michigan Department of Transportation excerpt from grading requirements for 2NS sand.

Sieve	Percent passing by weight
3/8"	100%
No. 4	95-100%
No. 8	65-95%
No. 16	35-75%
No. 30	30-55%
No. 50	10-30%
No. 100	0-10%
Loss by washing	2.6-3.35%

Figure 2

Michigan Department of Transportation excerpt from grading requirements for 6A stone.

Series Number	Class	Material	Total Percent Passing Square Sieve Opening				Loss By Washing
			1-1/2"	1"	1/2"	No. 4	
6	A	Gravel Stone	100	95-100	30-60	0-8	0.8

Section 6.17 – Drainfield Design Requirements

a. General

Drainfields shall be designed to effectively and uniformly distribute and expose effluent to all available infiltration surfaces within the proposed drainfield.

b. Design Factors

- Every drainfield shall be designed to utilize standard soil infiltration trenches in which approved perforated or open-jointed pipes distribute septic tank effluent through aggregate to the surrounding aggregate-soil interface.
- Several distribution of effluent may be utilized on drainfield sites where sloping ground or related performance justification exists and the proposed design and construction is authorized by the Director.
- Effective long term absorption of effluent is dependent upon the provision of sufficient trench infiltration area for effluent to percolate into the surrounding soil matrix. The rate of effluent infiltration must equal or exceed the rate of effluent application, expressed as gallons of effluent per square foot of infiltration area per day.
- The rate of effluent application shall be determined by permeability and textural properties of the underlying soil profile(s). Permeability shall be determined in accordance with the provisions of Sections 6.9 and 6.10 of these Regulations.
- The most limiting soil factor shall be used for drainfield design purposes.

c. Drainfield Infiltrations Area

The total square feet of trench infiltrative area of a drainfield is the sum of the trench bottom infiltrative areas of the individual standard soil infiltrative trenches within the drainfield.

d. Deep Excavation Drainfields

- The removal of upper soil layers of unacceptable or marginal permeability to access underlying permeable soil may be permitted by either excavation of the entire drainfield area or by vertical extension of individual standard infiltration trenches. Excavated soils shall be replaced with approved backfill material(s). The design and construction of such drainfields shall conform to criteria established pursuant to Section 4.2 of these Regulations and be approved by the Director.

- In all instances where a limiting layer of fine textured soil overlies soil of acceptable permeability of sufficient thickness as prescribed in Section 6.9, excavation of the drainfield shall extend a minimum of six inches (0.5 feet) into the acceptable soil stratum; greater penetration into the underlying permeable soil may be required by the Director.

Section 6.18 – Sizing of Drainfields

Drainfield size and capacity shall be determined by the maximum daily sewage flow from the premise(s) served and the permeability of receiving soils as follows:

a. Single Family Dwelling Premises (1) (2)

Permeability Rate Minutes/Inch	Required Square Feet of Trench Bottom Infiltration Area Per Bedroom (4)
10 or Less	165
11 – 20	215
21 – 30	260
31 – 40	320
41 – 50	380
51 – 60	440
Greater Than 60	See (3)

(1) Sewage flow of 150 gallons per bedroom per day.

(2) In every case, sufficient infiltration area shall be provided for two bedrooms.

(3) Permeability rates in excess of 60 minutes per inch are deemed unacceptable pursuant to Section 6.9 of these Regulations.

(4) When a dosing chamber is required, the internal volume of the drainfield distribution piping must accommodate at least 25% of the total daily sewage flow (see Section 6.20 b).

b. Commercial, Institutional, Industrial, Multiple Family and Places of Assembly (1)

Permeability Rate	Maximum Allowable Effluent Application Rate in Gallons Per Square Feet of Trench Bottom Infiltration Area (2) (4)
Minutes Per Inch	
10 or Less	1.00
11 – 20	0.70
21 – 30	0.58
31 – 40	0.47
41 – 50	0.40
51 – 60	0.35
Greater Than 60	See (3)

(1) The provisions of the “Michigan Criteria for Subsurface Sewage Disposal” promulgated by the Michigan Department of Public Health shall apply to premises generating daily sewage flow in an amount greater than 1000 gallons per day. Premises generating in excess of 10,000 gallons per day must obtain a Michigan Department of Natural Resources (MDNR) Discharge Permit, pursuant to Act 245, P.A. 1929 as amended.

(2) Required total square feet of trench bottom infiltration area determination:

Maximum Daily Sewage Flow ÷ Maximum Allowable

Effluent Application Rate in Gallons/Square Foot

(3) Permeability rates in excess of 60 minutes per inch are deemed unacceptable pursuant to Section 6.9 of these Regulations.

(4) When a dosing chamber is required, the internal volume of the drainfield distribution piping must accommodate at least 25% of the total daily sewage flow (see Section 6.20 b).

c. Reduction of Trench Bottom Infiltration Area

A reduction in the required total square feet of drainfield trench bottom infiltrative area may be allowed when the depth of aggregate below the trench distribution piping is increased in accordance with criteria established by the Director. Such modifications to the standard soil infiltrative trenches may be authorized by the Director after a critical evaluation of underlying soil profile and groundwater characteristics.

Section 6.19 – Drainfield Construction

- a. The bottom and sidewalls of drainfields to the top of the required aggregate shall be excavated in a manner which minimizes smearing, compacting and sealing of soil infiltrative surfaces. Excavation shall not be undertaken in fine textured soils that are in a saturated condition.
 - b. Drainfield construction shall not be undertaken when soils, aggregate or backfill materials are frozen, unless specific approval is granted by the Director.
 - c. Drainfield construction shall not be undertaken on unstable fill soil. Methods used to stabilize earthen fill materials shall conform to criteria established by the Director.
 - d. Drainfields shall be located a minimum of 10 feet horizontally from large trees. When onsite conditions allow less available isolation distance, an additional six inches of aggregate must be provided below the trench distribution piping.
 - e. Effluent discharges from a septic tank or similar sewage detention device to a drainfield shall be accomplished through the utilization of effluent distribution piping, and related distribution appurtenances, which conform to design, materials and construction criteria established by the Director pursuant to Section 4.2 of these Regulations.
- All piping connecting the septic tank or similar sewage detention device to the drainfield distribution box or distribution header, and drainfield trenches shall be of rigid, smooth wall, tight joint construction of a material and size approved by the Director; such piping shall be laid on undisturbed soil or be properly bedded and aligned for required hydraulic flow throughout its length.
 - A distribution box or header shall be installed between the septic tank and the drainfield trenches. Other methods of effluent distribution may be utilized when the design, construction and installation is approved by the Director.
 - A distribution box, when used, shall be set level and arranged so that effluent is equally distributed to each drainfield trench. Adequate provisions shall be made to assure box stability through the installation of footings and to provide access for inspection of the distribution box.
 - The design, construction, and installation of distribution boxes, headers and other distribution devices shall conform to criteria established by the Director.

- When a header pipe is utilized it shall be installed level and have an equal number of effluent distribution trenches spaced at required distances on both sides of the effluent pipe to header junction. A manifold or bridle header shall be provided when a drainfield contains nine or more trenches.
- f. Each drainfield trench shall contain approved effluent distribution piping aligned in the center between the trench sidewalls.
- g. Each drainfield trench shall be connected to an approved distribution header, distribution box or other distribution device installed to provide uniform application of effluent.
- h. Terminal ends of drainfield trench lateral lines shall be interconnected by a footer trench constructed in the same manner as the trench laterals. Exceptions to this requirement may be permitted by the Director on sloping ground.
- i. All trenches in a drainfield shall be of uniform width and length unless otherwise approved by the Director.
- j. The direction of the drainfield trenches shall follow the ground surface contour whenever possible to prevent variations in trench depth and earth cover.
- k. Drainfields raised above the adjacent ground surface elevation shall be provided with a clay confinement berm or be sloped to existing grade with earthen fill in accordance with criteria established by the Director.
- l. The final earth cover over drainfields shall be crowned at the center and sloped to the edges to prevent surface water infiltration into the drainfield
- m. The final earth cover over the drainfield shall not be compacted.

**THE FOLLOWING ADDITIONAL TRENCH CONSTRUCTION
SPECIFICATIONS ARE MANDATED:**

Construction Feature	Maximum	Minimum
Number of Trenches		2 (1)
Size of Distribution Pipe		4 Inches (1)
Length of Individual Trenches	100 Feet	10 Feet (1)
Width of Trenches	Uniform 36 Inches	Uniform 12 Inches (1)
Amount of Earthen Cover from Final Grade to Top of Aggregate	24 Inches	8 Inches
Aggregate Dimensions:		
Width	(4)	(4)
Above Distribution Pipes		2 Inches
Below Distribution Pipes		6 Inches (2)
Slope of Distribution Pipes	3 Inches/100 Feet (.25%)	Level
Slope of Header, Footer Pipe	None – Install Level	
Distance from High Water Table to Trench Pipe Invert		24 Inches (3)
Space Between Ends of Agricultural Tiles	1 / 4 Inch	1/8 Inch
Spacing Between Trenches (Center to Center)		12 & 18" Trench=4 Feet 24" Trench=5 Feet 36" Trench=6 Feet

- (1) Unless otherwise approved by the Director;
- (2) Additional depth required for trenches wider than 24 inches;
- (3) Greater distances required where State of Michigan criteria prevails;
- (4) Aggregate shall occupy entire width of trench.

Section 6.20 – Dosing Chamber Requirements

a. General

An effluent dosing system consisting of an approved tank and required mechanical appurtenances shall be installed when any of the following conditions apply:

- Sanitary sewage flow to an onsite sewage disposal system exceeds 2000 gallons per day.
- Distribution of effluent to the required drainfield cannot be achieved by gravity flow.
- A controlled volume of effluent discharge on a cyclical basis is necessary to insure uniform distribution of effluent throughout the drainfield.

b. Design, Construction and Operation Requirements

- A dosing tank shall be fabricated of sound, durable watertight materials not subject to corrosion or decay, and structurally capable of supporting the stresses to which it will be subjected. Construction shall not permit the inflow or outflow of liquids except as hydraulically designed inlets and outlets. Acceptable materials may include reinforced concrete, concrete blocks, or other materials approved by the Director.
- No dosing chamber shall be installed in any location which renders it inaccessible for inspection and maintenance.
- No dosing chamber shall be installed under a building, road, parking area or other location which subjects it to mechanical, hydraulic or structural stresses unless approval is granted by the Director.
- Annular openings at all pipe connections to a dosing chamber shall be sealed and made watertight at the points of entrance.
- A dosing chamber shall have a secured 36 inch access opening in the top surface over the dosing equipment to permit inspection, servicing, cleaning or maintenance. Access openings shall be provided with removable fitted lids or covers and permit accessibility to all components, including inlets and outlets.
- When access openings are at finish grade, provisions must be made to prevent the entrance of surface water and the release of gases and odors.

- All internal structural and mechanical components of dosing chambers shall be constructed of materials not subject to corrosion or decay.
- Dosing shall be accomplished by either approved sewage pumps or automatic siphons (where head conditions and topography permit) designed to discharge the required dose in 20 minutes or less.
- The liquid volume of each dose discharge shall be sufficient to dose the drainfield at no less than 25% of the maximum daily sewage flow from the premise(s) served. The drainfield distribution piping shall possess adequate internal capacity to accommodate the required dose in gallons.
- Dosing tanks shall be dimensioned to provide an internal capacity equal to the required dose volume, plus bottom and top allowances for siphon or pump submergence, vertical separation of liquid level and alarm controllers, and inlet to high liquid level freeboard.
- Duplex alternating mechanical dosing equipment, together with properly located and installed audible and visible high liquid level alarm devices shall be provided at premises where continuous dosing system operation and reliability is deemed essential.
- The dosing chamber discharge pipe shall conform to the construction and material requirements of Section 6.16, and shall be installed to prevent freezing via gravity flow to the drainfield or back to the dosing chamber at the end of a pumped dose. Other methods of freeze protection may be utilized if approved by the Director.
- Distribution boxes, drop boxes, headers, or other distribution devices receiving effluent from a dosing chamber at high velocity or under pressure must be designed and constructed to ensure uniform distribution, and provide mechanical stress and hydraulic thrust stabilization.
- Pumps; automatic siphons; liquid level and high water alarm devices; electrical control panels and circuitry; and other dosing chamber accessories shall be designed, sized, constructed, installed and operated in accordance with criteria established by the Director.

Section 6.21 – Holding Tank Systems

a. General

The collection, storage and disposal of sanitary sewage via the construction and use of an onsite sealed holding tank with periodic removal and transport to an offsite treatment and disposal facility may be permitted by the Director pursuant to these Regulations, or state statutes when so authorized, under the following restricted conditions:

- As an interim measure for new premise(s) when a public sanitary sewer or a permitted onsite septic tank and drainfield system is under construction to serve the premise(s).
- As an interim measure to serve existing premises proposing increased daily sanitary sewage flow when a public sanitary sewer or a permitted onsite septic tank and drainfield system is under construction to serve the premise(s).
- As a permanent measure for new or existing premise(s) generating 100 or less gallons per day of sanitary sewage where all other alternatives for sanitary sewage disposal have been investigated by the Director and determined to be impractical or unavailable.

b. Permits

- Applications for permits to construct and operate a holding tank system shall be submitted to the Health Department on forms provided by the Director.
- Permits shall not be issued until the Director determines that applicable provisions of Section 5.2 and 5.3 of these Regulations and established criteria have been satisfied, and;
- The proposed holding tank system complies with design, location, construction, operation, and disposal policies of the Michigan Department of Natural Resources adopted pursuant to Act 245, P.A. 1929, as amended.

c. Abandonment of Holding Tank Systems

- Holding tank systems shall be discontinued immediately upon availability of a public sanitary sewer or approved septic tank and drainfield system to serve the premise(s).

- Abandonment of a holding tank system shall conform to applicable provisions of Section 3.7 of these Regulations and criteria established by the Director.

Section 6.22 – Construction Variances

a. Nothing contained in Section 6.13 through 6.20 shall prevent the use of special or innovative construction methods, materials, or installation techniques provided that such methods, materials or techniques are first evaluated and approved by the Director and meet on an acceptable and equivalent basis the intent of these Regulations and all criteria, standards and policy established pursuant thereto.

b. The Director may impose acceptance conditions and requirements relative to the application and use of such special construction methods, materials or installation techniques including, but not limited to, the submission of detailed plans and specifications, periodic operation reports, periodic inspections, evaluation studies, and repair, modification or replacement agreements to address malfunctions.

ARTICLE VII – ENGINEERED ALTERNATIVE ONSITE SUBSURFACE SEWAGE DISPOSAL SYSTEMS

Section 7.1 – General Provisions

A permit applicant may submit a design proposal for an alternative engineered onsite subsurface sewage disposal system to overcome specific site suitability deficiencies and to allow for the orderly and reasonable development of property if the Director determines that a permit to construct a conventional onsite subsurface sewage disposal system cannot be authorized pursuant to Section 4.4, 5.4 and 6.15 of these Regulations.

Section 7.2 – Design Criteria

The Director is empowered to establish criteria, policies and standards governing the authorization, location, design, construction, use and operation of engineered alternative onsite sewage disposal systems.

Section 7.3 – Plan Submission

Applications for permits to construct engineered alternative onsite subsurface sewage disposal systems must be accompanied by detailed design and construction plans prepared by an Architect, Engineer or Land Surveyor licensed under Act 299, P.A. 1980, or a Sanitarian registered under Act 368, P.A. 1978 as amended.

Section 7.4 – Plan Review – Design Acceptance

The Director shall examine proposals for engineered alternative onsite subsurface sewage disposal systems in accordance with established criteria, policies and standards to determine that the following design and construction plan acceptance conditions have been satisfied:

- The design of the alternative system is based on sound engineering principles; is technically and factually accurate and complete; and can reasonably be expected to overcome identified onsite deficiencies and limitations.
- There is reasonable assurance that the proposed construction will provide satisfactory performance with no discharge of sanitary sewage to the ground surface or surface waters.
- Public health will not be jeopardized by the construction and operation of the alternative system.

Section 7.5 – Construction Permit Authorization

When the Director determines that the provisions of this Article have been met, a permit in accordance with Sections 5.2 and 5.3a may be issued authorizing construction of a proposed engineered alternative onsite subsurface sewage disposal system subject to any terms, conditions, restrictions and requirements imposed by the Director and by the engineering design, and construction specifications.

Section 7.6 – Design Proposal Disapproval – Permit Denial

- a. When in the opinion of the Director the design of an engineered alternative onsite subsurface sewage disposal system fails to meet the provisions of Sections 7.2, 7.3 and 7.4 of this Article, the construction permit required by Section 5.1a of these Regulations shall be denied.
- b. When the Director determines that areas on the property proposed for installation of an onsite sewage disposal system meet the site suitability provisions of these Regulations, proposals for engineered alternative onsite subsurface sewage disposal systems shall not be accepted or considered, unless it can be demonstrated that construction of a conventional onsite subsurface sewage disposal system would be impossible, unworkable or unreasonable.

Section 7.7 – Site Options

- a. Design proposals for installation of engineered alternative onsite subsurface sewage disposal systems shall be accepted for consideration by the Director if five and one-half (5-1/2) or more feet of the upper onsite soil profiles in the area proposed for installation exhibit unacceptable permeability.

- b. On sites where soil of acceptable permeability underlies an upper non-permeable soil as indicated in (a) above, the permit applicant may elect to construct a conventional onsite subsurface sewage disposal system utilizing the deep soil stratum if such construction meets with the provisions of Section 6.9 and 6.17d of these Regulations.

ARTICLE VIII – OTHER AGENCY REQUIREMENTS

Section 8.1 – Conflicts and Inconsistencies

Where conflicts or inconsistencies exist between the provisions of these Regulations and any regulations, requirements, rules, standards, criteria or guidelines of the federal government for the State of Michigan, the more restrictive requirements shall govern and prevail.

Section 8.2 – Local Ordinances

These Regulations shall supersede inconsistent or conflicting local ordinances, pursuant to Michigan's Public Health Code, Section 2441 of Act 368, P.A. 1978, as amended.

Section 8.3 – Compliance With Other Codes

The issuance of permits or the acceptance or approval of plans and proposals involving site improvements or alterations associated with the construction, repair, replacement, enlargement or relocation of an onsite sewage disposal system pursuant to these Regulations does not relieve persons receiving such permits, acceptance or approvals from complying with all consistent applicable provisions of building and construction codes; zoning, planning and flood management requirements, other state and local laws, ordinances, rules, regulations, and orders; or from securing permits and approvals required thereunder.

ARTICLE IX – INSPECTION AND APPROVAL REQUIREMENTS

Section 9.1 – General Provisions

- a. The Director is authorized to conduct inspections and investigations deemed necessary to effectively review and evaluate plans, proposals and applications for permission to construct, repair, replace, enlarge, alter or relocate an onsite sewage disposal system.
- b. The Director shall conduct interim and final inspections of onsite sewage disposal systems, or components thereof, at the time of construction, repair, replacement, enlargement, alteration or relocation.
- c. No onsite sewage disposal system shall be backfilled, covered or otherwise rendered inaccessible for inspection until all interim and final inspections prescribed by the Director have been requested and conducted.

d. Upon completion of required inspections, the Director shall notify the permittee or his/her representative and the installation contractor of the inspection findings and outcomes.

e. The owner of the premise upon which the onsite sewage disposal system is constructed, repaired, replaced, enlarged, altered, or relocated, and his/her installation contractor shall have equal responsibility to notify the department at the completion of specified construction stages, and request inspections at installation intervals prescribed on approved plans and/or permits issued by the Director.

Section 9.2 – Installation and Use Approval

a. The Director is empowered to deny approval or acceptance of any onsite sewage disposal system at the time of construction, repair, replacement, enlargement, alteration or relocation that fails to comply with the provisions of these Regulations or the construction permit issued pursuant thereto.

b. No onsite sewage disposal system constructed, repaired, replaced, enlarged, altered or relocated subsequent to the adoption of these Regulations shall be placed in operation or otherwise utilized for its intended purpose unless it has first been approved or accepted in writing by the Director. Operation and use of any onsite sewage disposal system or its components which has not received such approval or acceptance from the Director shall constitute a violation of these Regulations.

ARTICLE X – APPEALS

Section 10.1 – General Provisions

Any person taking exception to, or aggrieved by, a decision, ruling, requirement, violation notice, denial, disapproval or order issued by the Director under these Regulations, after an opportunity for an Administrative Conference with the Director or his/her designated representative, has the right to a contested case hearing in the matter. Such contested case hearings shall be conducted in accordance with written policies and procedures adopted by the department and applicable provisions of the Administrative Procedures Act of 1969.

ARTICLE XI – FEES

Section 11.1 – General Provisions

a. Fees for applications, permits, plan reviews and other services required or authorized by these Regulations shall be assessed according to the current fee schedule established by the Macomb County Board of Commissioners.

- b. Assessed fees shall be paid in advance of the requested, required or authorized service performed under these Regulations.
- c. Fees paid are nonrefundable unless requests for refunds are received by the Director prior to the performance of the requested, required or authorized service.

ARTICLE XII – VARIANCES

Section 12.1 – General Provisions

The Director may grant a variance from the strict conformance and enforcement of the provisions of these Regulations or policies, criteria and standards established thereto, when it has been demonstrated that such variances are not contrary to the purpose of these Regulations as specified in Section 1.2; and, are deemed necessary for the prevention, control or abatement of pollution and the orderly and reasonable development of property in Macomb County.

ARTICLE XIII – SEVERABILITY

Section 13.1 – General Provisions

These Regulations and the various articles, sections and clauses therein are hereby declared to be severable. If any article, sentence, paragraph, section, or clause is adjudged unconstitutional or invalid, it is hereby provided that the remainder of these Regulations shall not be affected thereby.

ARTICLE XIV – AMENDMENTS

Section 14.1 – General Provisions

The Director may adopt amendments and revisions to these Regulations with the consent and approval of the Macomb County Board of Commissioners, pursuant to Sections 2441 and 2442 of the Michigan Public Health Code, Act 368, P.A. 1978 as amended.

ARTICLE XV – PENALTIES/INJUNCTIONS

Section 15.1 – Violations

Any person who violates the provisions of these Regulations, or any part thereof, shall be deemed guilty of a misdemeanor punishable by imprisonment for not more than ninety days, or a fine of not more than \$200.00 or both pursuant to Section 2441(2) of the Michigan Public Health Code, Act 368, P.A. 1978 as amended. Each day that a violation of these Regulations continues shall be deemed a separate offense.

Section 15.2 – Civil Penalties

The Macomb County Board of Commissioners may adopt a schedule of monetary civil penalties to be assessed for violations of these Regulations, or order(s) issued pursuant thereto as provided in Sections 2461 and 2462 of the Michigan Public Health Code, Act 368, P.A. 1978, as amended.

Section 15.3 – Injunctive Proceedings

When any person has been found to have violated a provision of these Regulations or an order issued pursuant thereto, the Director may maintain injunctive action to restrain, enjoin, prevent or correct a violation of these Regulations, or a condition which adversely affects the public health, as provided in Section 2465 of the Michigan Public Health Code, Act 368, P.A. 1978, as amended.

ARTICLE XVI – REPEAL OF PREVIOUS REGULATIONS

Section 16.1 – General Provisions

Rules and Regulations Governing Sewage, Garbage and Excreta Disposal in Macomb County first adopted by the Macomb County Board of Health on April 4, 1956, and approved by the Macomb County Board of Supervisors on April 10, 1956, and subsequent amendments approved by the Macomb County Board of Supervisors on April 15, 1958, and August 17, 1966 are hereby repealed.

ARTICLE XVII – APPROVAL AND EFFECTIVE DATE

Section 17.1 – General Provisions

These Regulations have been adopted by the Macomb County Health Department and approved by the Macomb County Board of Commissioners on December 21, 1989, and shall be effective on and after February 4, 1990